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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/509,445      | 09/27/2004  | Byung-Hoon Ryou      | I-212               | 7349             |

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EXAMINER

WIMER, MICHAEL C

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/509,445 | <b>Applicant(s)</b><br>RYOU ET AL. |  |
|                              | <b>Examiner</b><br>Michael C. Wimer  | <b>Art Unit</b><br>2821            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/27/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/6/2005</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Drawings*

1. Figures 1 & 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites an indefinite alternative recitation, "hollow or solid parasitic element". Since the two structures are diverse elements, the claim should be written in Markush form.

In line 3, "several times" is not definite. The question, "What defines a winding?" should be clear from Claim 1. Similarly, "winding a wire..." is not the same as "bending a strip material several times..." are not the same result.

In line 6, it is uncertain what is meant by "height of resonance" because "height" is a measure of distance and not relative to frequency.

***Information Disclosure Statement***

3. Although the prior art submitted here on 6/6/2005 has been considered, it appears that it belongs to a different case because it pertains to headlamps. See the International Search Report submitted for PCT/KR03/02420-0. Note: this case is an application of PCT/KR03/00662. Clarification is requested.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1,2,4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Engblom (5771023).

Regarding Claim 1, Engblom shows in Fig. 2a, a dual band antenna (see Fig. 5) comprising a hollow/solid parasitic element 205 (a rod antenna, which may be inductively/capacitively coupled, col. 3, lines 56-61) within an inner space of a (wound) helical antenna 203,207 and a dielectric material 206 therebetween, and generating dual resonance all arranged as claimed (Fig. 5).

Regarding Claim 2, the helix is circular.

Regarding Claim 4, the rod antenna resonance is defined by its length.

Regarding Claim 5, triple resonance is affected via the rod antenna size, corresponding to its shape, along with the dual band operation of the helices 203,207.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Engblom (5771023) in view of Strickland (5329287).

The elements of the antenna are discussed above with respect to Engblom. Additionally regarding Claim 3, the size or thickness of the parasitic element with the helix antenna affects bandwidth and frequency of operation. Strickland is cited as proving such a relationship of structure and resonance frequency and shows an internal parasitic conductor 28 and capacitively coupled cap 10 or 20 (e.g., a sunken cap of varying cross sectional geometry) in Figures 3-5 and teaches that bandwidth is increased due to the coupling and thickness of the parasitic element (see col. 2, lines 45-50). It would have been obvious to the skilled artisan to vary the thickness of the parasitic rod antenna element in Engblom as suggested by Strickland in order to change the resonance due to their capacitive coupling.

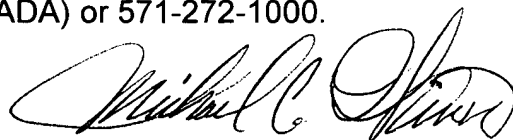
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8. The patent to Takei et al. (5559524) is cited as of interest showing a bent helix configuration.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (571) 272-1833. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael C. Wimer  
Primary Examiner  
Art Unit 2821

MCW  
9/6/2006